IN THE CLAIMS:

Kindly amend the claims as follows:

1. (Currently Amended) Method for separating entrained particles from a gas in a fluidised bed reactor system which comprises a separation region defined by a cylindrical r-, φ-, z- coordinate system, the method comprising the consecutive steps of:

-leading the gas in the z-direction (axial direction),

-diverting the gas to flow substantially in the r-direction (radial direction), while keeping the gas circumferentially distributed in r φ-planes, ~~which means that~~ wherein the gas is allowed to flow to and/or from substantially the whole circumference of the separation region in ~~said~~ the rφ- planes, and

-mechanically separating the particles from the gas while the gas is flowing substantially in the r-direction.

2. (Currently Amended) Method according to claim 1, comprising the further steps of:

-causing the gas having flown in ~~said~~ the r-direction to flow in the reversed r-direction, and

-mechanically separating the particles from the gas while the gas is flowing in ~~the~~ a reversed r-direction~~, and~~

~~-optionally, further reversing the direction of gas flow and mechanically separating the particles from the gas as above~~.

3. (Currently Amended) Method according to claim 1, wherein in ~~said~~ the cylindrical coordinate system (r,φ,z) the gas is initially directed from a larger r-value towards a smaller r-value ~~,~~ for ~~the~~ a first separation step~~, and wherein after all separation steps have been performed the gas, having been directed~~ of at least one separation step, and after a last separation step of the at least one separation step in which last separation step the gas is directed towards a smaller r-value ~~in the last separation step, is led~~ , leading the gas away in the z-direction.

4. (Currently Amended) Method for separating entrained particles from a gas in a fluidised bed reactor system, comprising the steps of:

-causing the gas to flow in a stacked multileveled flow with consecutive particle separation levels X_N (X_1, X_2, X_3,..., X_N...), N being an integer,

-directing the gas to flow in a first direction on the first level X_1,

-bringing the gas to the next level X_2 from ~~said~~ the first level X_1,

-directing the gas to flow in a direction reversed to ~~said~~ the first direction on ~~said~~ the next level X_2, so as to create a doubled-back flow path~~;~~

~~-optionally, bringing the gas to additional particle separation levels, so as to cause the gas to flow in the first direction on levels with odd-numbered N and in the reversed direction on levels with even-numbered N, and~~

~~-mechanically separating the particles from the gas on each level~~.

5. (Currently Amended) Method according to claim 4, in which the gas is caused to flow from a ~~centre~~ center zone to a cirumference of ~~said~~ the ~~centre~~ center zone or vice versa, whereby ~~said~~ the directions are essentially radial directions in respect of the ~~centre~~ center zone and the circumference associated thereto.

6. (Currently Amended) Fluidised bed reactor system including a particle separator for separating entrained particles from a gas having a flow path, comprising a set of non-centrifugal mechanical separator elements disposed in the flow path of the gas, so that the gas is able to pass between the separator elements while the inertia of the particles directs them to the separator elements upon which they impinge and are separated and removed from the gas flow, ~~characterised in that~~ wherein the set of separator elements is arranged in a configuration having a ~~centre~~ center zone with a ~~centre~~ center axis, and a circumference, wherein directional means are provided for directing the gas so that gas passing through the set of separator elements flows from the circumference to the ~~centre~~ center zone of the configuration or vice versa.

7. (Currently Amended) System according to claim 6, in which ~~said~~ the set of separator elements is arranged as a structure having consecutive particle separation levels X_N (X_1, X_2, X_3,..., X_n...), N being an integer, wherein ~~said~~ the directional means are arranged at the circumference and at the ~~centre~~ center zone of the configuration, so as to

cause the gas to flow through the set of separator elements in one direction on levels with odd-numbered N and in the reversed direction on levels with even-numbered N.

8. (Currently Amended) Fluidised bed reactor system including a particle separator for separating entrained particles from a gas having a flow path, comprising a set of non-centrifugal mechanical separator elements disposed in the flow path of the gas, so that the gas is able to pass between the separator elements while the inertia of the particles directs them to the separator elements upon which they impinge and are separated and removed from the gas flow, ~~characterised in that said~~ wherein the set of separator elements is arranged as a structure having consecutive particle separation levels X_N (X_1, X_2, X_3,..., X_n...), N being an integer, wherein directional means are arranged to cause the gas to flow through the various levels of the structure in one direction on levels with odd-numbered N and in the reversed direction on levels with even-numbered N.

9. (Currently Amended) System according to claim 8, in which ~~said~~ the set of separator elements is arranged in a configuration having a ~~centre~~ center zone with a ~~centre~~ center axis, and a circumference, wherein ~~said~~ the directional means are located at the circumference and at the ~~centre~~ center zone of the configuration, so as to cause the gas to pass through the set of separator elements from the circumference to the ~~centre~~ center zone of the configuration or vice versa.

10. (Currently Amended) System according to claim 6, wherein ~~said~~ the configuration has a generally cylindrical shape, preferably with wherein the separator elements ~~being~~ are arranged essentially symmetrically.

11. (Currently Amended) System according to claim 6, wherein the separator elements have an elongated shape and extend essentially in parallel with the ~~centre~~ center axis.

12. (Currently Amended) System according to claim 6, wherein ~~said~~ the separator elements are channel-shaped beams having an essentially U-shaped cross-section, wherein the beams are arranged so that the particles impinge upon the bottom of the U and then fall down, guided by the channel-shaped beam, to be collected.

13. (Currently Amended) System according to claim 6, in which ~~said~~ the set of separator elements forms a number of ring-shaped arrays being placed within each other.

14. (Original) System according to claim 13, in which the separator elements of an array are circumferentially displaced with respect to the separator elements of an adjacent array.

15. (Currently Amended) System according to claim 12, in which each U-shaped beam is provided with a respective additional U-shaped beam attached in parallel thereto, each of the additional U-shaped beams being provided with a respective further U-shaped beam separator element attached in parallel thereto, forming a unit with three U-shaped beam channels, dividing plates being inserted in at least two U-shaped beam channels for mechanical segregation of ~~said~~ the channels and a section of at least one of the elements in the unit being removed, so as to create three particle separation levels of impinge areas, one for each element in the unit, wherein ~~said~~ the directional means are arranged to direct the gas in alternative level directions.

16. (Currently Amended) System according to claim 6, wherein the particle separator is located inside a reactor~~, preferably at the upper portion thereof~~, and wherein ~~said~~ the ~~centre~~ center axis is in parallel with the axis of the reactor~~, preferably co-axially~~.

17. (Currently Amended) System according to claim 6, wherein ~~said~~ the configuration is circular cylindrical.

18. (Currently Amended) Method according to claim 2, wherein in ~~said~~ the cylindrical coordinate system (r,φ,z) the gas is initially directed from a larger r-value towards a smaller r-value, for ~~the~~ a first separation step~~, and wherein after all separation steps have been performed the gas, having been directed~~ of at least one separation step, and

after a last separation step of the at least one separation step in which last separation step the gas is directed towards a smaller r-value ~~in the last separation step, is led~~ , leading the gas away in the z-direction.

19. (Currently Amended) System according to claim 7, wherein ~~said~~ the configuration has a generally cylindrical shape, preferably with the separator elements being arranged essentially symmetrically.

20. (Currently Amended) System according to claim 9, wherein ~~said~~ the configuration has a generally cylindrical shape, preferably with the separator elements being arranged essentially symmetrically.

Kindly add the following new claim:

--21. (New) Method according to claim 4, comprising bringing the gas to additional particle separation levels, so as to cause the gas to flow in the first direction on levels with odd-numbered N and in the reversed direction on levels with even-numbered N, and

-mechanically separating the particles from the gas on each level.--.